ABSTRACT

[Means to Solve the Problem]

A digital modem comprising a modulation circuit 1and a demodulation circuit 2 for modulating/demodulating 1/-1 binary signal. 11 of the modulation circuit 1 is a generator of sequence h[k] of finite length, and 12 is a generator of sequence h[-k] of finite length, which is h[k] whose time axis is inverted. A switch 13 is a selector for changing over h[k] and h[-k] according to 1 or -1 input signal, and selects the output of the generator 11 generating h[k] when the input signal is 1, and selects the output of the generator 12 generating h[-k] when the input signal is -1.

21 of the demodulation circuit 2 is a FIR filter having as filter coefficient the sequence h[-k] which is h[k] whose time axis is inverted, and 22 is a FIR filter having as filter coefficient the sequence h[k]. 23 and 24 are square multipliers. A digital modem of simple communication method not requiring complicated diffusion symbol or cycle control, wherein input modulations signals are filtered and output respectively by the FIR filters 21, 22, squared by the square multipliers 23, 24, and the difference of results is determined to obtain the demodulation output, is provided.